

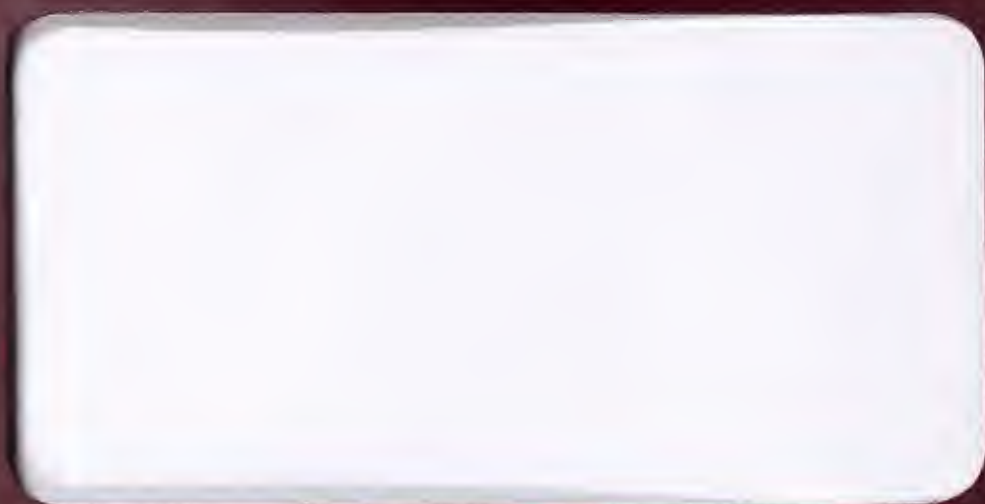
**Information Services  
Market Assessment  
Manufacturing Industries**

INPUT

YWED1

1991





# **Information Services Market Assessment Manufacturing Industries**

Presented to

Electronic Data Systems  
Manufacturing and  
Distribution Division

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# Information Services Market Assessment Manufacturing Industries

## Outline

- Objectives
- Analysis Structure
- Overview of Findings
- Findings by Industry
- Appendixes
  - A: Ranking Summary
  - B: IT Intensity Index



# Manufacturing Industries Objectives

- Understand basis for attractiveness of specific manufacturing market segments
- Prioritize these market segments based on attractiveness
- Understand major external and internal needs/issues affecting each market segment
- Understand the implications for IT and IT services
- Size the opportunity for EDS-type services by industry category





## Evaluation Process

- Definition of Industry Categories
  - 14 categories
- Criteria Definition
  - Eleven criteria
  - Quantitative and qualitative
- Ranking Scale
  - Scale: 1 to 10
  - Greater change means greater inclination to outsource
- Weighted Ranking
  - Combination of criteria 1 through 10 plotted against attractiveness of IT outsourcing
  - Attractiveness is weighted combination of:
    - Criteria 3 - Competitiveness within the industry
    - Criteria 8b - Importance of IT to industry—Future
    - Criteria 9 - Inclination to outsource any services
    - Criteria 10 - Current use of outsourced IT services





## Industry Categories

Industry Sector	Subsectors	SIC Codes
Food and Tobacco	Food & Tobacco	20,21
Textiles & Apparel	Textiles	22xx
	Apparel/Other Fabric Prod.	23xx
Paper & Allied Products		26xx
Rubber & Plastics		30xx
Primary Metals		33xx
Fabricated Metals		341x-347x
Industrial & Commercial Machinery	Electronic Office Machines	351-356,8 3578/9
Computers & Peripherals	Computers, Storage, Terminals	3571,2,5,7
Printed Circuit Boards & Semiconductors		3672,4
Telephone/Comm. Equipment		3661,3,5
Electronic Components & Instruments		361,3,4,5 382,6
Transportation Equipment		371,4,5
Aerospace & Defense	Ordnance, Ammunition	3482,3,4,9
	Turbine Engines & Generators	3511
	Ship/Boat Building & Repair	3731/2
	Aircraft Mfgs	372
	Missiles & Space	376
	Tanks & Components	3795
	Search & Navigation	3812
Wholesale Distribution - Durable Goods		501x-509x





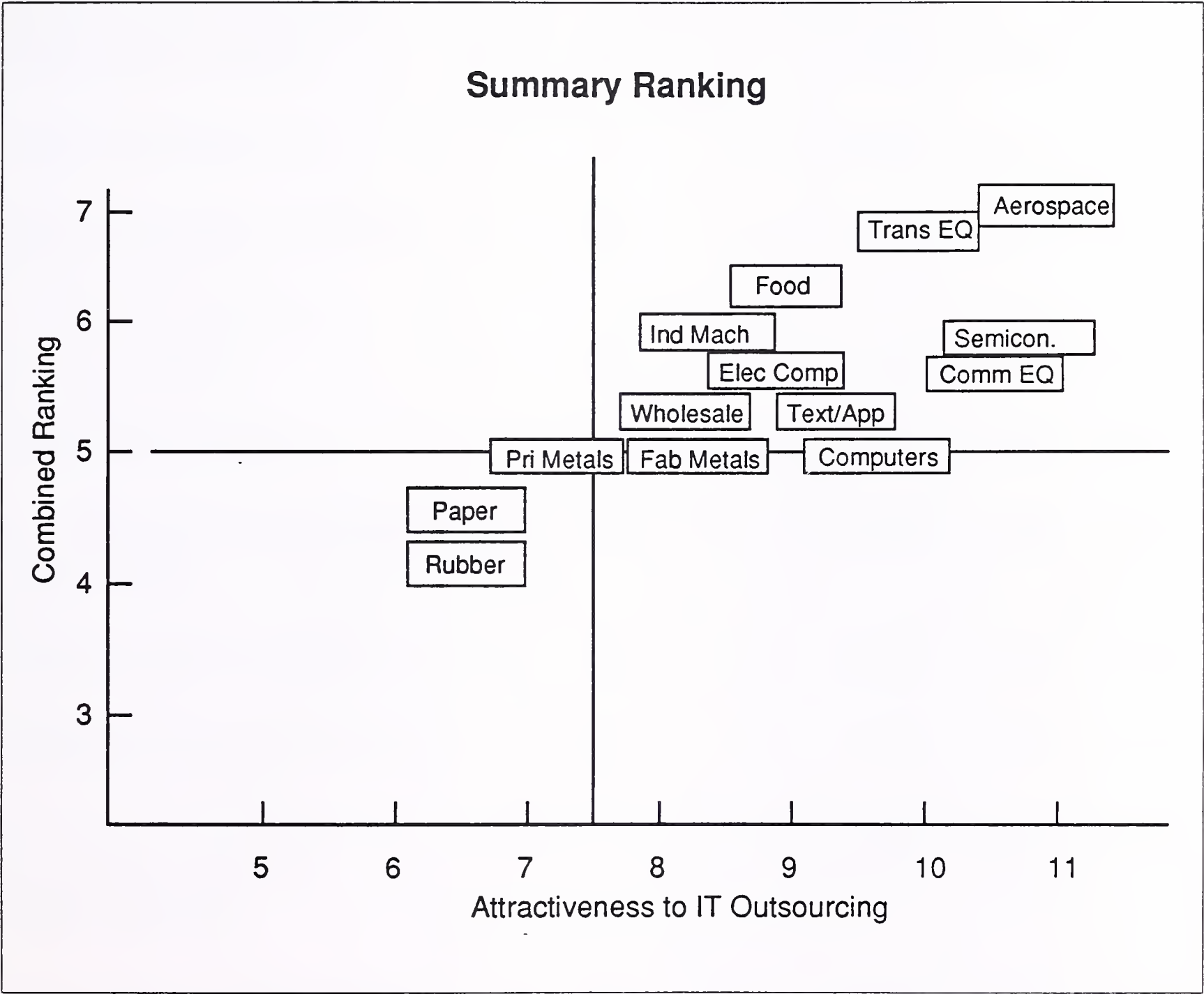
## Evaluation Criteria

Criteria	Ranking Basis
1. Industry revenue and growth rates	High growth and size
2. Market potential based on distribution of companies	Number of companies over \$0.5B and companies \$0.5B to \$1.0B
3. Competitiveness within the industry	Higher levels of competition
4. Sensitivity to social, political, legal, and environmental impacts	Higher impact of external factors
5. Sensitivity to general economic impacts	Higher impact of any economic change
6. Sensitivity to human resources issues	Higher impact of personnel issues
7. Estimated IT expenditures and relative growth rates	Size of IT expenditures and their growth
8. Importance of IT to industry a. Past and Present b. Future	Greater importance
9. Inclination to outsource any type of service	Concentration on core capabilities and functions
10. Current use of outsourced IT services	Current use of third-party SI and SM in each industry





# Summary Ranking







## Criteria No. 2—Distribution of Companies

Industry & Subsector	Number of Companies (Revenues \$ Billions)					Ranking (1-10)
	>3B	1-3B	0.5-1B	<0.5B	Total	
Food and Tobacco	34	59	91	4,412	4,596	9.0
Textiles & Apparel	2	14	34	4,481	4,531	5.5
Paper & Allied Products	11	25	31	1,992	2,059	5.5
Rubber & Plastics	2	8	15	2,715	2,740	3.5
Primary Metals	10	22	35	2,227	2,294	6.0
Fabricated Metals	4	16	18	1,317	1,355	4.5
Industrial & Commercial Machinery	12	20	48	6,408	6,488	6.5
Computers & Peripherals	8	15	15	402	440	4.0
Printed Circuit Boards & Semiconductors	1	6	8	374	389	2.5
Telephone/Comm. Equipment & Instruments	8	6	19	1,472	1,505	4.5
Electronic Components	8	18	26	1,898	1,950	5.0
Transportation	27	43	50	1,114	1,234	7.5
Aerospace & Defense	26	48	38	1,079	1,191	7.0
Wholesale Distribution- Durable Goods	9	18	26	1,712	1,765	5.5

Source: Wards Business Directory of U.S. Public and Private Companies, 1990 - Volume 4.

Ranking: Based on combination of total companies above \$0.5B (0 companies-0, 25-3, 50-5, 100-7, 200-10) number \$0.5B to \$1.0B (0-0,10-3,20-5,40-7,80-10)



Criteria No. 7  
Estimated IT Expenditures and Growth Rate

Industry & Subsector	INPUT 1990 Estimate			Ranking (1-10)
	\$B	% Rev	Growth +/0/-	
Food and Tobacco	7.9	1.7	0	5
Textiles & Apparel	3.3	2.4	-	4
Paper & Allied Products	2.0	1.6	0	3
Rubber & Plastics	1.7	1.6	-	2
Primary Metals	2.4	1.6	-	2
Fabricated Metals	5.7	3.5	0	5
Industrial & Commercial Machinery	6.3	3.5	+	6
Computers & Peripherals	3.4	4.2	+	6
Printed Circuit Boards & Semiconductors	2.4	4.2	+	5
Telephone/Communications Equipment & Instruments	1.5	3.8	+	5
Electronic Components	5.6	3.8	0	6
Transportation Equipment	10.7	4.2	+	8
Aerospace & Defense	9.9	4.2	+	8
Wholesale Distribution- Durable Goods	10.7	0.3	0	4

Source: INPUT IS Industry Forecasts

Ranking: Based on size (\$5B=5), % of Rev (2%=5) and growth (0=5)

IS expenditures estimate is based on 4.33\*INPUT Forecast

Growth rate relative to overall average: + above average, 0 average, - below average





## Criteria No. 8

### Importance of IT to Industry

Industry & Subsector	Ranking (1-10)	
	Past/Present	Future
Food and Tobacco	7	7
Textiles & Apparel	5	7
Paper & Allied Products	6	6
Rubber/Plastics	5	6
Primary Metals	5	6
Fabricated Metals	6	7
Industrial & Commercial Machinery	6	7
Computers & Peripherals	6	7
Printed Circuit Boards & Semiconductors	7	8
Transportation Equipment	7	8
Telephone/Communications Equipment & Instruments	6	8
Electronic Components	5	6
Aerospace & Defense	7	8
Wholesale Distribution-Durable Goods	5	7

Source: INPUT Staff

Ranking: 5 = Average





## Criteria No. 10

### Current Use of Outsourced IT Services

Industry & Subsector	Ranking (1 to 10)		
	Systems Integration	Systems Management	Combined
Food and Tobacco	5	5	5.0
Textiles & Apparel	4	3	3.5
Paper & Allied Products	4	4	4.0
Rubber/Plastics	4	4	4.0
Primary Metals	6	5	5.5
Fabricated Metals	6	6	6.0
Industrial & Commercial Machinery	6	6	6.0
Computers & Peripherals	5	3	4.0
Printed Circuit Boards & Semiconductors	4	4	4.0
Telephone/Communications Equipment & Instruments	6	3	4.5
Electronic Components	5	4	4.5
Transportation Equipment	6	6	6.0
Aerospace & Defense	8	4	6.0
Wholesale Distribution-Durable Goods	4	3	3.5

Source: INPUT Research

Ranking: 5 = Average



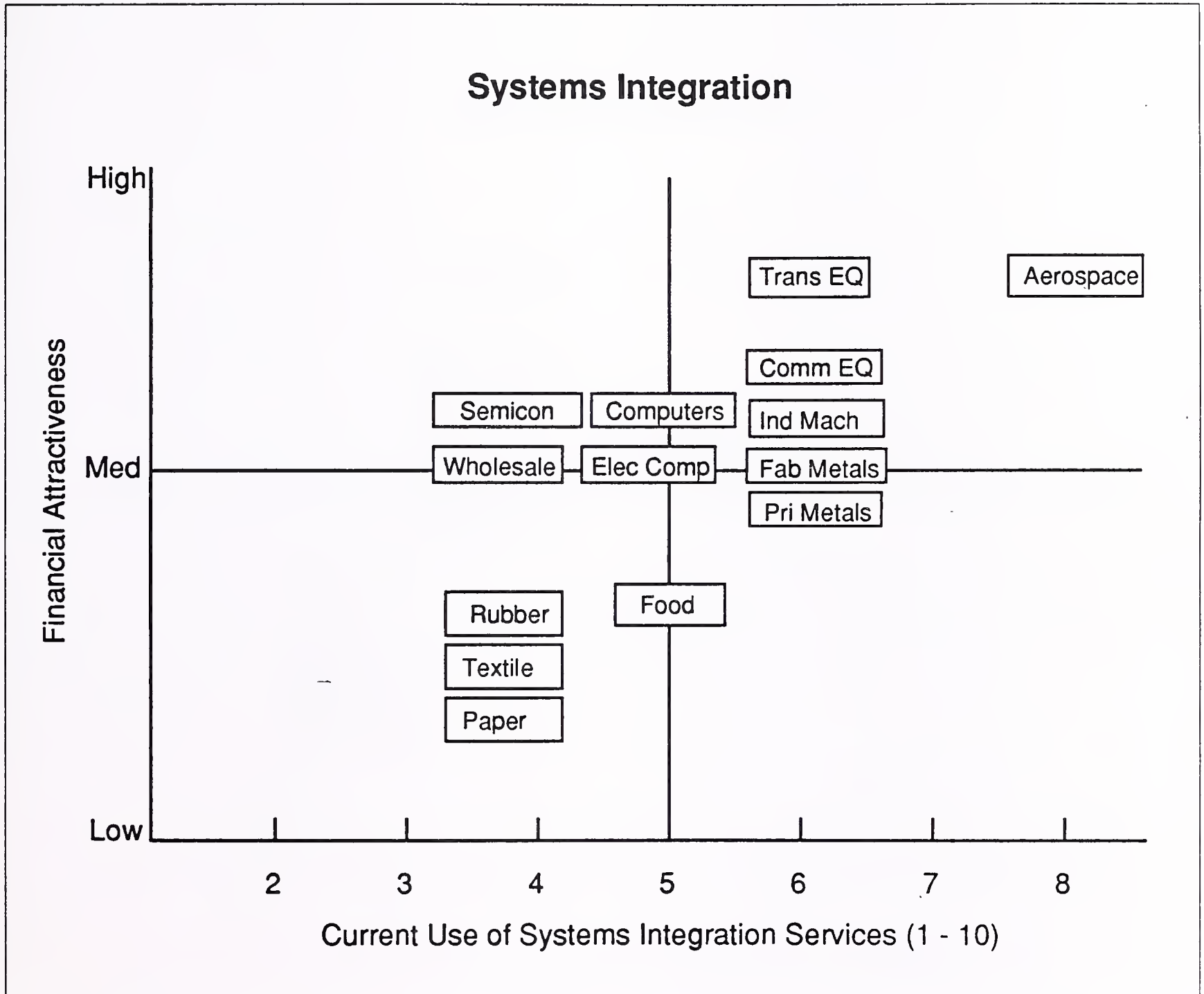
# Systems Integration and Systems Management Financial Attractiveness

- Financial attractiveness based on:
  - Size of market opportunity
  - Size of deals
  - Profitability potential
- Rating scale
  - High = large deals, large market and high margin
  - Low = smaller deals, narrower market and tighter margins
- Financial attractiveness plotted against current use of systems integration and systems management in each industry category



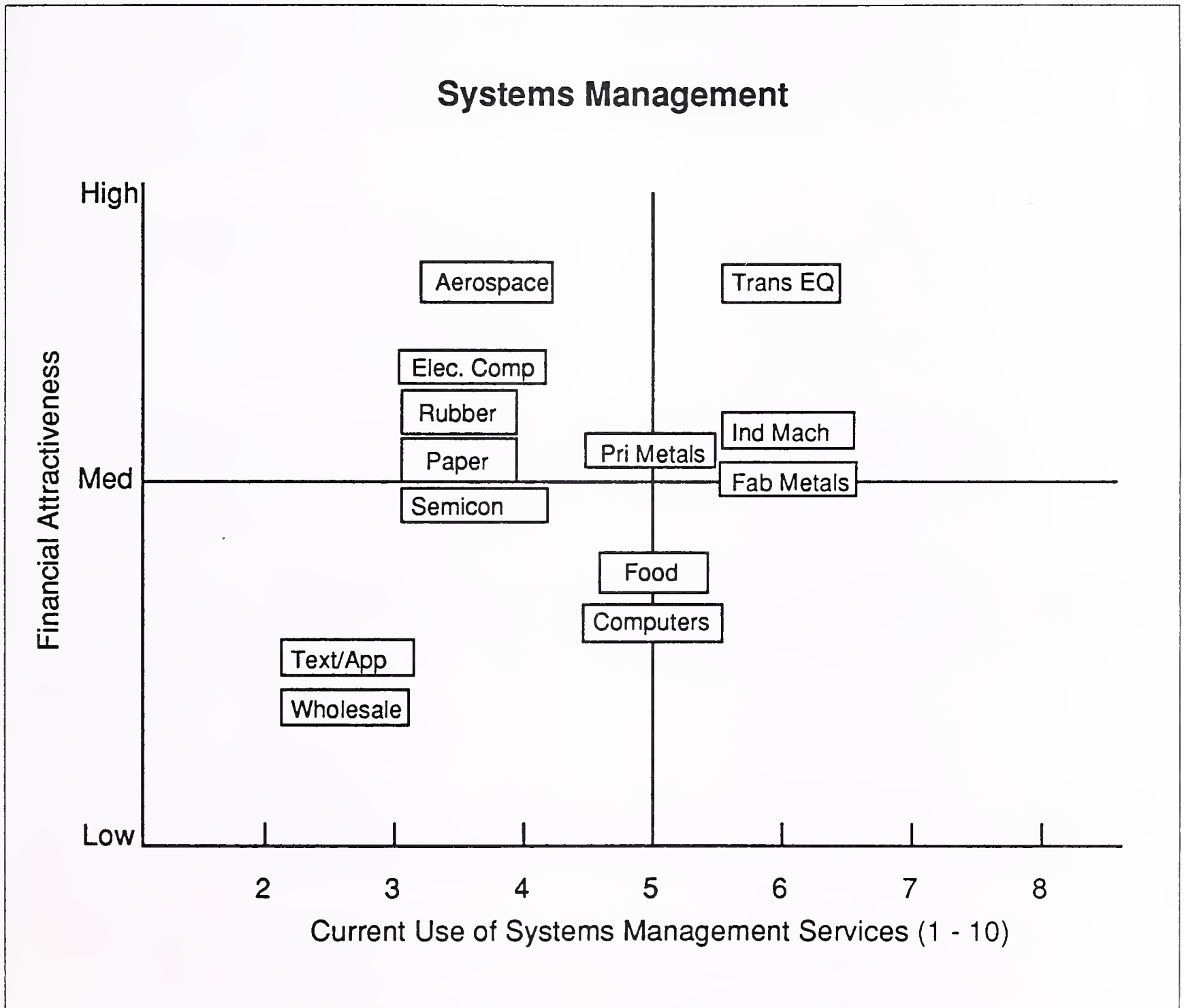


# Systems Integration Financial Attractiveness





# Systems Management Financial Attractiveness





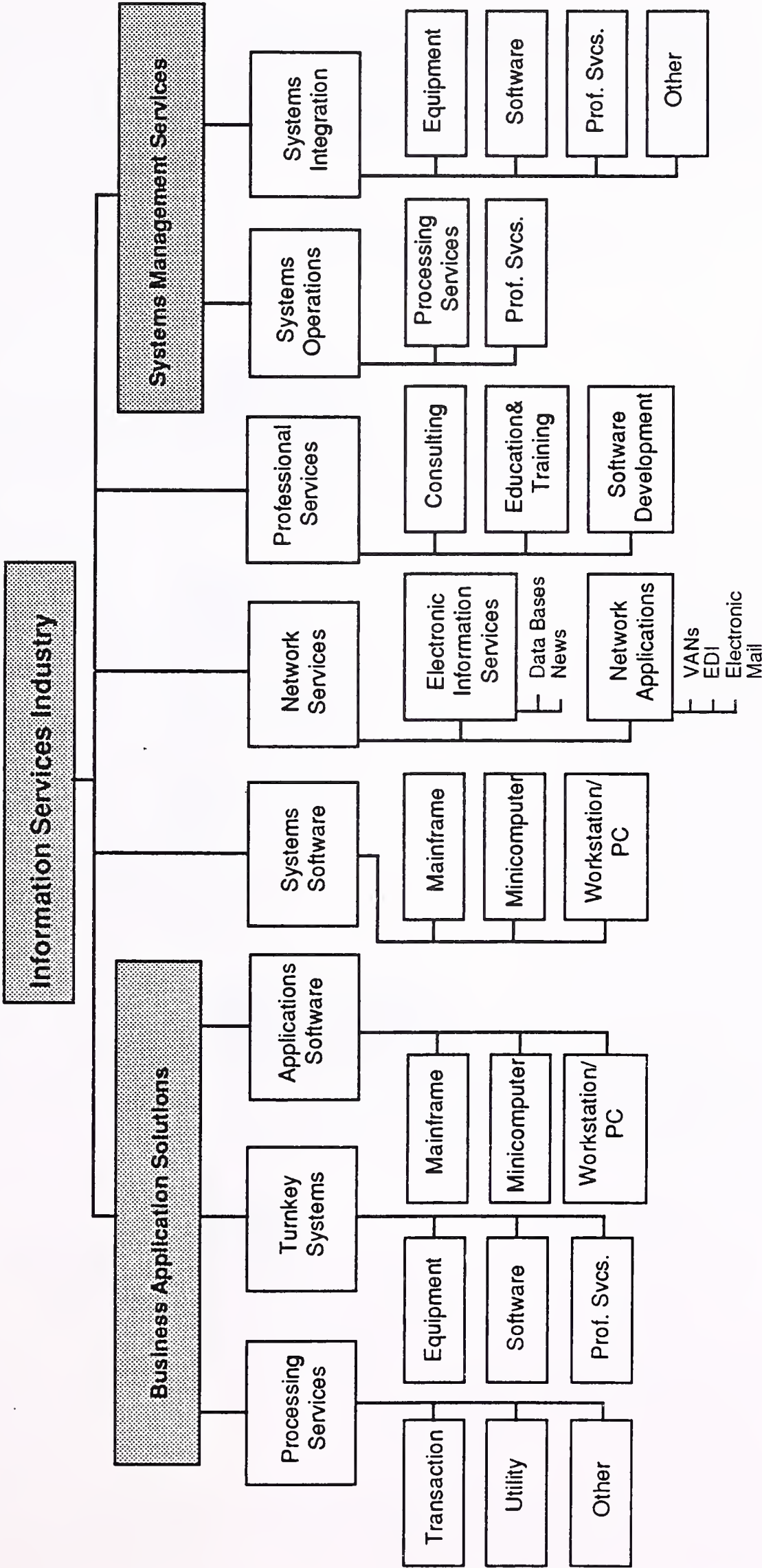


## Market Opportunity Overview

- Based on INPUT definition of Information Services and Software Products market and 1990-1995 U.S. market forecasts.
  - Discrete Manufacturing
  - Process Manufacturing
  - Wholesale Distribution
- Revenue projections for SIC code-based categories projected to 1990 and 1995.
- INPUT forecasts distributed based on revenue of categories as percent of total revenue weighted by an IT Intensity Index.
  - IT Intensity Index estimates the relative use of IT by the categories within the major INPUT industry sectors
- EDS Services is the combination of INPUT Systems Integration, Systems Operations, and Professional Services delivery modes plus Transaction Processing Services.



Information Services Industry Structure—1990



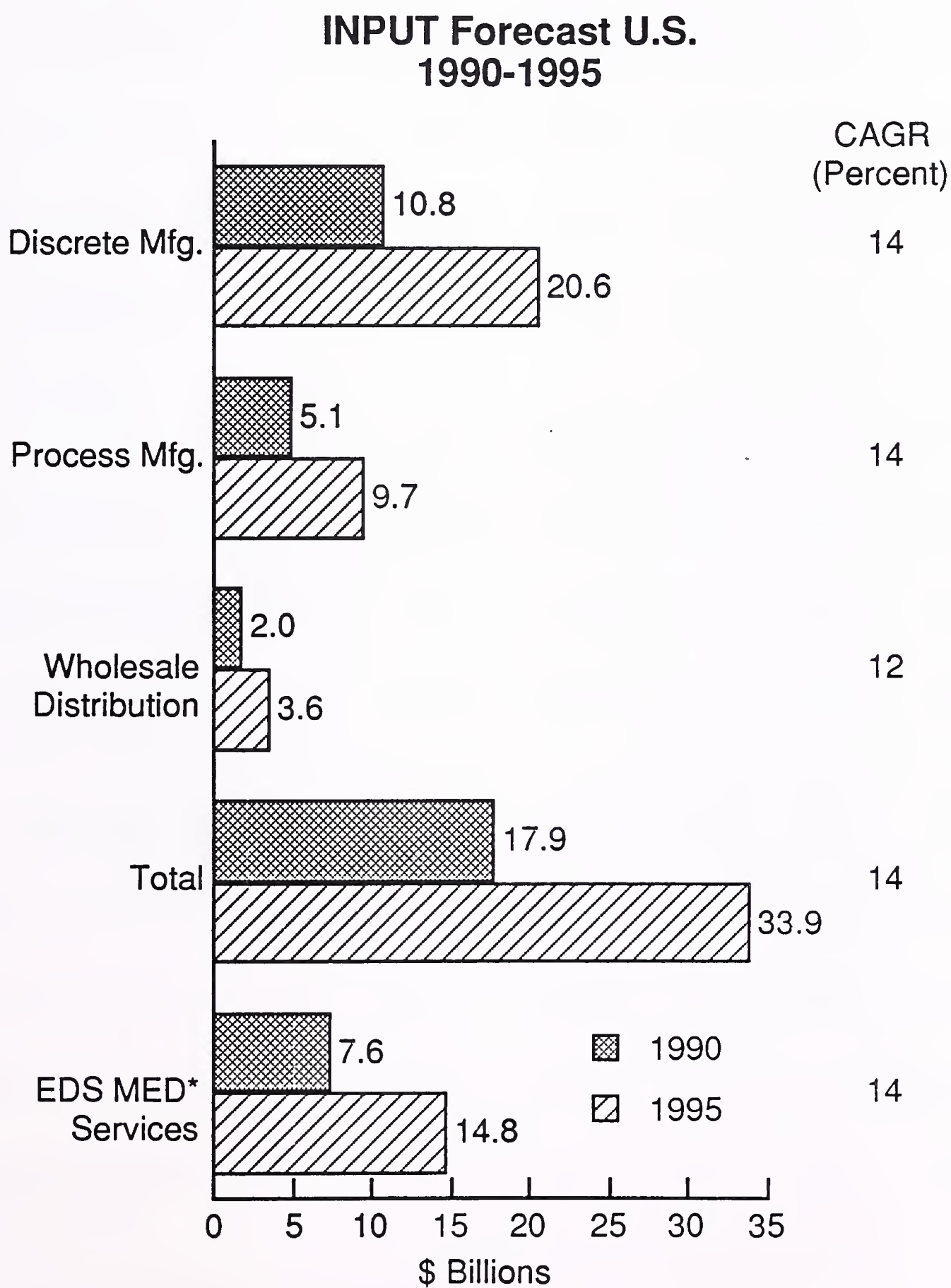
Source: INPUT  
MAMAP-A-11/90





# Market Opportunity

## U.S. Market, 1990-1995



\* For industry categories included in study



## Market Opportunity

Industry & Subsector	INPUT IS			EDS Services		
	1990 \$B	1995 \$B	CAGR %	1990 \$B	1995 \$B	CAGR %
Food and Tobacco	1,485	3,046	16	976	1,927	15
Textiles & Apparel	615	1,038	11	378	652	12
Paper & Allied Products	375	643	11	246	407	11
Rubber & Plastics	325	643	15	214	406	14
Primary Metals	453	895	15	298	566	14
Fabricated Metals	1,070	1,903	12	637	1,192	13
Industrial & Commercial	1,186	2,320	14	706	1,453	16
Computers & Peripherals	637	1,306	15	379	818	17
Printed Circuit Boards & Semiconductors	514	1,053	15	306	660	17
Telephone/Communications Equipment & Instruments	283	503	12	168	315	13
Electronic Components	1,059	1,884	12	631	1,180	13
Transportation Equipment	2,009	3,573	12	1,196	2,238	13
Aerospace & Defense	1,865	3,825	15	1,111	2,396	17
Wholesale Distribution-Durable Goods	921	1,556	11	389	630	10

Source: INPUT IS Industry Forecasts

EDS Services is the combination of INPUT Systems Integration, Systems Operations, Professional Services delivery modes plus Transaction Processing Services.





## Industry Summaries

- Summary of Issues
  - Industry Issues
  - IT Issues
- Aerospace & Defense
- Transportation Equipment
- Food & Tobacco
- Hi-Tech
  - Computers & Peripherals
  - Circuit Boards & Semiconductors
  - Telephone & Communications Equipment
- Industrial & Commercial Machinery
- Electrical Components
- Wholesale Distribution - Durable Goods
- Textiles & Apparel
- Fabricated Metals
- Primary Metals
- Paper & Allied Products
- Rubber & Plastics



## Summary of Industry Issues

### Manufacturing and Distribution Industries

Industry Sector	Industry Issues							H = High D = Developing
	Globalization	Restructuring	Market Change	Capital Pressure	Personnel Issues	Emphasis on Service	Environmental Pressure	
Food & Tobacco	H					H		
Textiles & Apparel	H							
Paper						H		
Rubber & Plastics	H							
Primary Metals	H			H				
Fabricated Metals								
Industrial Machinery			H	H				
Computers		D	H	D		D		
Circuit Boards Semiconductors	H							
Comm. Equipment	H	D	H					
Electronic Component								
Transportation Equip.	H	D	H	H			H	
Aerospace			H	H				
Wholesale Distribution							H	



## Summary of IT Issues

### Manufacturing and Distribution Industries

Industry Sector	IT Issues							Electronic Commerce	New Technology Adoption	Larger Size IT Projects	Distributed IS Resources	Investment in Software	Aging Software Environments	Multivendor Environments
Food & Tobacco														
Textiles & Apparel														
Paper														
Rubber & Plastics														
Primary Metals														
Fabricated Metals														
Industrial Machinery														
Computers														
Circuit Boards Semi Conductors														
Comm. Equip.														
Electronic Component														
Transportation Equip.														
Aerospace														
Wholesale Distribution														

H = High  
D = Developing





## Industry Summary

### Aerospace & Defense

#### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,865	3,825	15
EDS Services	1,111	2,396	17

#### Overall Ranking

Combined Ranking	6.9	Medium high
Attractiveness to IT Outsourcing	11.0	Very high

#### Key Criteria

	Criteria	Comment
Plus		
3	Industry Competitiveness	Shift to commercial
4	Sensitivity to External Factors	High impact on industry
8	Future Importance of IT	Foundation of industry
9	Any Outsourcing	Established business practice
7	IT Expenditures	Above average growth
2	Number of Companies	Above average - many very large
4	Human Resource Issues	Layoffs, high benefits
10	Outsourcing IT	Aggressive user of SI
Minus		
5	Sensitivity to Economy	Lagging reaction
10	Outsourcing IT	Lagging user of SO



## Industry and Information Technology

- Foundation of the industry
  - Long standing, well entrenched and difficult to change
  - Much of IT not commercially based
- Leading user of leading-edge technology
  - Receptive to different IT alternatives
  - Opportunity to retrain IT professionals
- Systems designed for government requirements, not management

## Industry and Services

- Tradition of using and reliance on:
  - Consulting experts
  - Subcontracting services and manufacturing
  - Systems integration services
- High concentration of employees - Opportunity to outsource many services

## Future Issues/Opportunities

- Shift from government to commercial
  - New markets and new products
  - Different infrastructure required
  - Change in jobs, systems, management style
- Many information systems built to meet government reporting, not managerial control
  - Significant replacement of infrastructure systems may be required
  - Transition management will be required if technology shift is made





# Industry Summary Transportation Equipment

## Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	2,009	3,573	12
EDS Services	1,196	2,238	13

## Overall Ranking

Combined Ranking	6.7	Medium high
Attractiveness to IT Outsourcing	9.9	High

## Key Criteria

	Criteria	Comment
Plus		
7	IT Expenditures	Largest market for EDS Services
8	Importance of IT	Future importance ranked among highest
9	Any Outsourcing	Demonstrated use during 1980s
2	Number of Companies	2nd largest - many very large
6	Human Resource Issues	Unions, high benefits
4	Sensitivity to External Factors	Environment
Minus		



## Industry and Information Technology

- Critical to business, but a drag on capital
- Aggressive in interorganization systems area (electronic commerce)
  - Very large companies create IT demands on all sizes of companies
  - EDI, trade payments, engineering specifications
- Major users of multiplatforms/technologies
  - Integration challenge immense
  - Open systems an opportunity
- Reliance on IBM to set the direction—wait and see attitude

## Industry and Services

- Active and aggressive users of consulting services
- Growing tendency to outsource at all levels of business
- Established user of systems integration and systems operations

## Future Industry Issues/Opportunities

- Continued international pressure on technology, productivity, and costs
  - Increasing focus on core functions
  - Further consolidation likely
- International affiliation important at all levels
- Continued expansion of electronic commerce driven by automobile manufacturers



## Industry Summary

### Food & Tobacco

#### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,485	3,046	16
EDS Services	615	1,038	15

### Overall Ranking

Combined Ranking	6.3	Above average
Attractiveness to IT Outsourcing	9.0	High

### Key Criteria

	Criteria	Comment
Plus		
2	Number of Companies	Greatest number of companies in EDS market (\$0.5B-\$1.0B)
3	Industry Competitiveness	Ever-changing products
4	External Factors	Consumerism
7	IT Intensity—Future	Linkage to the consumer
Minus		
5	Sensitivity to Economy	Modest impact in downturns
9	Any Outsourcing	Limited experience





## Industry and Information Technology

- More conservative than other industries
  - Less shop floor IT
  - Slow but steady progress
  - Focus on distribution process
- Increasing appetite for consumer information
  - Linkage to point of sale
  - Electronic commerce opportunities
  - Information linkages will grow
- Warehousing automation high priority
- UPC coding foundation for most data handling
- Centralized IS function and less involved senior management
- Examples of leading IT users
  - Frito-Lay
  - Lipton

## Industry and Services

- In general an average consumer of information services
- An industry of emphasis by Big 6 - drawing on audit clients
- White collar costs relatively controlled
- Often act as the wholesale distributor

## Future Issues/Opportunities

- Consolidation remains a theme
- Industry predictability should remain
- Closer links to retail point of sale
  - Consumption data collection
  - Electronic coupons
  - Reduction in role of local distributor
  - Customizing the products on the shelf
  - Responding to pressures to pay for shelf space
- Europe (Eastern and Western) is a major opportunity
- Role of IT will grow, pressuring senior management to understand and utilize
- Importance of distribution will grow



## Industry Summary

### Wholesale Distribution—Durable Goods

#### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	2,009	3,570	12
EDS Services	848	1,447	11

### Overall Ranking

Combined Ranking	5.1	Average
Attractiveness to IT Outsourcing	7.9	Above average

### Key Criteria

	Criteria	Comment
Plus		
8	Future Importance of IT	Business differentiator
5	Sensitivity to Economy	Fast reaction required
Minus		
4	Sensitivity to External Factors	Limited impact on industry
6	Human Resources Issues	Capital intensive
7	IT Expenditures	Tightly controlled
9	Any Outsourcing	Limited inclination





## Industry and Information Technology

- Information technology has become a differentiator in the industry
  - Means to control customers
  - Source of added revenues
  - Source of added margin
- Very dependent on warehouse automation
  - Source of productivity
  - Intense linkage to information technology
- Major user of network services (EDI)
- Less advanced in IT than non-durable goods wholesale distributors

## Industry and Services

- Has shifted from labor to capital intensive
- Much of industry is vertically oriented—e.g., pharmaceuticals, food, industrial
  - Requires industry expertise
  - Some of Big 6 offer specialization

## Future Issues/Opportunities

- Exposed to impacts of interorganizational systems
  - Electronic commerce removes linkages in distribution chain
- Value to larger customers will continue to erode
- Value to smaller customers will remain strong
  - Information technology
  - Cost control
  - Service based



## Industry Summary High Technology

### Industry Sectors

- Computers & Peripherals
- Circuit Boards & Semiconductors
- Telephone & Communications Equipment

### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,434	2,862	15
EDS Services	853	1,793	17

### Overall Ranking

Combined Ranking	5.5	Average
Attractiveness to IT Outsourcing	10.0	High

### Key Criteria

	Criteria	Comment
Plus		
8	Future Importance of IT	Strong growth expected
3	Industry Competitiveness	Domestic and international
4	External Factors	Environmental & regulatory
Minus		
2	Number of Companies	Treat three industries as a group
6	Human Resources Issues	No layoff traditions (weakening)
10	IT Outsourcing	Limited current use of SI or SO



## **Industry and Information Technology**

- Some specialized shop floor opportunities (e.g., Consilium)
- Focus on product engineering systems
- Order management less disciplined
- Shoemakers' children

## **Industry and Services**

- Industry emphasized by Big 6
- No history of outsourcing services
- Lagging user of systems integration and systems management

## **Future Issues/Opportunities**

- Consolidation likely
- Focus on product development versus production and distribution to continue
- Continued pressure on manufacturing costs





## Industry Summary

### Industrial & Commercial Machinery

#### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,186	2,320	14
EDS Services	706	1,453	16

#### Overall Ranking

Combined Ranking	5.6	Average
Attractiveness to IT Outsourcing	8.3	Above average

#### Key Criteria

	Criteria	Comment
Plus		
8	Future Importance of IT	Tradition of IT use with growing need
2	Number of Companies	Third highest - \$0.5B to \$1.0B
Minus		
3	Industry Competitiveness	Mixed outside of household sector



## **Industry and Information Technology**

- Average history of IT use and history
- More modest-sized plants and less use of sophisticated IT
- Many modest-sized data centers

## **Industry and Services**

- Cost/capital pressure should drive service use
- High sense of allegiance

## **Future Issues/Opportunities**

- Some industry consolidation
- Growing overhead pressures
- Interorganizational systems will develop—led by larger discrete sectors
- Divisionalized companies offer multiple opportunities



## Industry Summary Textiles & Apparel Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	615	1,038	11
EDS Services	378	652	12

### Overall Ranking

Combined Ranking	5.3	Average
Attractiveness to IT Outsourcing	9.1	High

### Key Criteria

	Criteria	Comment
Plus		
3	Industry Competitiveness	Consumer driven Key to cost control Increasing
5	Sensitivity to Economy	
6	Human Resources Issues	
8	IT Intensity	
Minus		
1	Market Size	Modest to no growth
4	External Factors	Low user currently
10	Outsourcing IT	





## **Industry and Information Technology**

- Direction will mimic that of Food & Tobacco
  - POS to factory linkage
  - Customized order management
- Example of leading IT user—Levi Strauss

## **Industry and Services**

- No history of outsourcing services
- Lagging user of systems integration and systems management

## **Future Issues/Opportunities**

- Continuing offshore cost pressure
- Distribution systems at least as important as manufacturing systems
- Response time tied to offshore production creates an opportunity



## Industry Summary Fabricated Metals

### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,070	1,903	12
EDS Services	637	1,192	13

### Overall Ranking

Combined Ranking	5.1	Average
Attractiveness to IT Outsourcing	8.0	Above average

### Key Criteria

	Criteria	Comment
Plus 8	Future Importance of IT	
Minus 3 9	Industry Competitiveness Any Outsourcing	Not current user



## Industry and Information Technology

- Typically a customized product manufacturing process
- Customer is another manufacturing firm—IT impacted by customer's systems
- IT impacted by larger hub companies—automobile manufacturers

## Industry and Services

- No history of outsourcing services





## Industry Summary

### Electronic Components & Instruments

#### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	1,059	1,884	12
EDS Services	631	1,180	13

#### Overall Ranking

Combined Ranking	5.2	Average
Attractiveness to IT Outsourcing	8.4	Above average

#### Key Criteria

	Criteria	Comment
Plus		
Minus		
1	Market Size	Large, but low growth
2	No. of companies	Modest



## Industry Summary Primary Metals

### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	453	895	15
EDS Services	298	566	14

### Overall Ranking

Combined Ranking	5.0	Average
Attractiveness to IT Outsourcing	7.6	Average

### Key Criteria

	Criteria	Comment
Plus		
4	External Factors	Environment
Minus		
7	IT Expenditures	



## Industry and Information Technology

- Constrained investment capability
- Aging IT base

## Industry and Services

- Learning to outsource





## Industry Summary Paper & Allied Products

### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	375	643	11
EDS Services	246	407	11

### Overall Ranking

Combined Ranking	4.0	Below average
Attractiveness to IT Outsourcing	6.8	Below average

### Key Criteria

	Criteria	Comment
Plus		
4	External Factors	Environment/recycling
Minus		
7	IT Expenditures	Process manufacturing
3	Any Outsourcing	



## **Industry and Information Technology**

- Less product specialization than Food and Apparel
- Controlling customer through direct order entry

## **Industry and Services**

- No history of outsourcing services

## **Future Issues/Opportunities**

- Environmental/recycling issues will grow



## Industry Summary Rubber & Plastics

### Market Opportunity

	\$ Billions		CAGR (%)
	1990	1995	
INPUT IS Industry	325	643	15
EDS Services	214	406	14

### Overall Ranking

Combined Ranking	4.0	Below average
Attractiveness to IT Outsourcing	6.8	Below average

### Key Criteria

	Criteria	Comment
Plus		
Minus		
2	No. of companies	Declining through consolidation
7	IT Expenditures	
3	Any Outsourcing	
10	IT Outsourcing	Lagging user





## Future Issues/Opportunities

- Industry consolidation
- Foreign ownership



## Appendix A

### Ranking Summary

Industry Sector		Industry Revenue	No. of Companies	Industry Competitiveness	Social Political Impact	Economic Impact	Human Resources Issues	IT Expenditures
Food & Tobacco	8	9.0	7	8	4	6	5	
Textiles & Apparel	3	5.5	7	4	7	7	4	
Paper & Allied Products	4	5.5	4	7	4	5	3	
Rubber & Plastics	4	3.5	4	7	5	5	2	
Primary Metals	5	6.0	5	7	5	6	2	
Fabricated Metals	4	4.5	4	5	6	5	5	
Ind. & Comm. Machinery	5	6.5	4	5	6	5	6	
Computers & Peripherals	4	4.0	7	4	4	4	6	
Boards & Semiconductors	4	2.5	8	7	6	4	5	
Tele/Comm Equip	3	4.5	7	6	6	5	5	
Electronic Components	4	5.0	6	5	6	5	6	
Transportation Equip.	5	7.5	6	7	7	7	8	
Aerospace & Defense	6	7.0	7	8	4	7	8	
Wholesale Distribution	10	5.5	5	3	6	4	4	



## Appendix A

### Ranking Summary

		Importance of IT Past/Present	Importance of IT-Future	Any Outsourcing	Current IT Outsourcing	Average 1-10	Attractiveness of IT
Food & Tobacco	7	7	3	5.0	6.3	9.0	
Textiles & Apparel	5	7	5	3.5	5.3	9.1	
Paper & Allied Products	6	6	3	4.0	4.7	6.7	
Rubber & Plastics	5	6	3	4.0	4.4	6.7	
Primary Metals	5	6	3	5.5	5.0	7.6	
Fabricated Metals	6	7	4	6.0	5.1	8.0	
Ind. & Comm. Machinery	6	7	5	6.0	5.6	8.3	
Computers & Peripherals	6	7	5	4.0	5.0	9.3	
Boards & Semiconductors	7	8	6	4.0	5.6	10.5	
Tele./Comm. Equip.	6	8	6	4.5	5.5	10.1	
Electronic Components	5	6	5	4.5	5.2	8.4	
Transportation Equip.	7	8	7	6.0	6.9	10.3	
Aerospace & Defense	7	8	8	6.0	6.9	11.0	
Wholesale Distribution	5	7	4	3.5	5.2	7.9	





## Appendix B

### IT Intensity Index

Industry & Subsector	IT Intensity Index
Food & Tobacco	1.1
Textiles & Apparel	1.0
Paper & Allied Products	1.0
Rubber/Plastics	1.0
Primary Metals	1.0
Fabricated Metals	1.0
Industrial & Commercial Machinery	1.0
Computers & Peripherals	1.2
Printed Circuit Boards & Semiconductors	1.2
Transportation Equipment	1.2
Telephone/Communications Equipment & Instruments	1.1
Electronic Components	1.1
Aerospace & Defense	1.2
Wholesale Distribution-Durable Goods	0.9

Examples of low intensity (0.7 to 0.9) industries are mining, wood/lumber, furniture and printing



# About INPUT

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

Continuous-information advisory services, proprietary research/consulting, merger/acquisition assistance, and multiclient studies are provided to users and vendors of information systems and services (software, processing services, turnkey systems, systems integration, professional services, communications, systems/software maintenance and support).

Many of INPUT's professional staff members have more than 20 years' experience in their areas of specialization. Most have held senior management positions in operations, marketing, or planning. This expertise enables INPUT to supply practical solutions to complex business problems.

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